

CLAIMED

1. A trolley, comprising
 - a main body capable of moving, provided with at least a outer track of a predetermined length on the lateral part thereof; and
 - a clamping means, provided with
 - at least a first and a second moving plates capable of moving along the main body, each provided with a block including a guide track of a predetermined length on a bottom surface thereof to be defined at the outer side of the outer track; and
 - at least a pair of clamping claws, respectively disposed on each moving plate, each comprising
 - a support;
 - a clamping member arranged on the support;
 - a driving wheel, fixed on the support for matching with the guide track disposed in the block of the moving plate;
 - at least a pair of vertical moving wheels, fixed at the end of the support where disposed the driving wheel and matching with the outer track;
 - at least a pair of positive stops, wherein the first positive stop is arranged on the bottom surface of the support for matching with the outer track, the second positive stop is arranged on the top surface of the support for matching with the block of the moving plates; and
 - at least a power push rod for driving the first and second moving plates to generate relative movements therebetween.
2. A trolley according to claim 1, wherein the main body further comprises at least an inner track provided with a sliding slot and a guide surface, the outer side of the inner track fixed with the outer track.
3. A trolley according to claim 2, wherein a plurality of sliding devices are fixed on both side parts of each moving plate, matching with the inner track respectively.
4. A trolley according to claim 3, wherein the sliding device of the moving plate comprises a horizontal guide wheel matched with the sliding slot of the inner track and a vertical guide wheel matched with the guide surface of the inner track.
5. A trolley according to claim 3, wherein the sliding device of the moving plate is a wheel with a flange, wherein the rolling body of the wheel matches with the sliding slot of the inner track, while the flange of the wheel matches with the guide surface of the inner track.
6. A trolley according to claim 3, wherein the sliding device of the moving plate is a sliding block matching with the sliding slot of the inner track.
7. A trolley according to claim 1, wherein the block of the moving plate is further provided

with a stop disposed at the inner side of one end of the block for stopping the second positive stop.

8. A trolley according to claim 1, wherein each moving plate has at least a wing outside the outer track for arranging the block.

9. A trolley according to claim 8, wherein the wing of each moving plate is arranged in a manner of extending closely to each other.

10. A trolley according to claim 9, wherein the wing on the second moving plate extends from inside to the first moving plate and the wing of the first moving plate extends from outside to the second moving plate.

11. A trolley according to claim 1, wherein the outer track is provided with a narrow through slot for the support to pass through and a pair of openings provided at the ends thereof.

12. A trolley according to claim 11, wherein the outer track is provided with an arc plate on each end thereof.

13. A trolley according to claim 1, wherein the clamping claw comprises a horizontal moving wheel fixed at the outer end of the support.

14. A trolley according to claim 13, wherein the clamping member comprises a first roller set having at least one or more rotary rollers, a shaft of which is fixed to the support by a fixing seat.

15. A trolley according to claim 14, wherein the clamping member further comprises a second roller set having at least a rotary roller, a shaft of which is fixed to the support by a fixing seat.

16. A trolley according to claim 15, wherein the second roller set is staggered to the first roller set by arranging the shaft thereof higher than that of the first roller set to form a wedge shape with the first roller set.

17. A trolley according to claim 1, wherein each of the first and second moving plates is respectively driven by a power push rod having an end fixed on the main body and the other end connected with the respective moving plate.

18. A trolley according to claim 17, wherein the first and second moving plates are provided with at least a sensor therebetween for detecting the signals of opening-in-position of the support.

19. A trolley according to claim 17, wherein the main body and each of the first and second moving plates are provided with at least a sensor therebetween respectively for detecting the signals of closing-in-position of the support.

20. A trolley according to claim 17, wherein the power push rod drives the respective moving plate in a substantive same driving force.

21. A parking system for transporting cars, including a loading table, a differential table

capable of moving relative to the loading table, a trolley capable of moving relative to the differential table, a longitudinal driving device, a power tube line transmission mechanism, and a power valve station and electric control system thereof, wherein the trolley comprises

a main body capable of moving, provided with a pair of outer tracks of a predetermined length arranged on both laterals thereof;

a clamping means, provided with

two pairs of mated moving plates, each including a first and a second moving plate, capable of moving along the main body, and each moving plate provided with a pair of blocks oppositely arranged on the bottom surface thereof, each block having a guide track of a predetermined length to be defined at the outer side of the outer track; and

four pairs of clamping claws, arranged on both sides of each moving plate respectively, each clamping claw comprising

a support;

a clamping member, disposed on the support;

a driving wheel, fixed on the support for matching with the guide track in the block of the moving plate;

at least a pair of vertical moving wheels, fixed on the end of the support where disposed the driving wheel and matching with the outer track by means of an opening on the outer track;

at least a pair of positive stops, wherein the first positive stop is arranged on the bottom surface of the support for matching with the outer track, and the second positive stop is arranged on the upper surface of the support for matching with the block with a guide track of the moving plate; and

at least a power push rod for driving the first and second moving plates to move relative to each other.

22. A parking system according to claim 21, wherein the main body is further provided with an inner track comprising a longitudinally-arranged sliding slot, the outer lateral of the inner track fixed with the outer tracks respectively.

23. A parking system according to claim 22, wherein the two lateral parts of each moving plate each have a pair of horizontal sliding devices fixed thereon to match with the sliding slots of the inner track respectively.

24. A parking system according to claim 23, wherein the inner track is further provided with a longitudinally-arranged guide surface.

25. A parking system according to claim 24, wherein each of the two lateral parts of each moving plate is further provided with a pair of vertically-arranged guide wheels to match with the guide surface.

26. A parking system according to claim 21, wherein the trolley further comprises a plurality of moving wheel sets arranged at the outer side of the inner track thereof.

27. A parking system according to claim 21, wherein the block of the moving plate is provided with a stop thereon, which is disposed on the inner side of one end of the block for stopping the second positive stop.

28. A parking system according to claim 21, wherein each moving plate has at least a wing, extending out from the outer track for arranging the block.

29. A parking system according to claim 28, wherein the wing of each moving plate is arranged in a manner of extending closely to each other.

30. A parking system according to claim 29, wherein the wing of the second moving plate extends from inside to the first moving plate, and the wing of the first moving plate extends from outside to the second moving plate.

31. A parking system according to claim 21, wherein the outer track has a narrow through slot for the support to pass through and a pair of openings arranged at the ends of the outer track.

32. A parking system according to claim 31, wherein the outer track is provided with an arc plate on each end thereof.

33. A parking system according to claim 21, wherein each clamping claw is further provided with a horizontal moving wheel at the outer lateral thereof.

34. A parking system according to claim 33, wherein the clamping member comprises a first roller set having at least a rotary roller, a shaft of which is fixed to the support by a fixing seat.

35. A parking system according to claim 34, wherein the clamping member further comprises a second roller set having at least a rotary roller, a shaft of which is fixed to the support by a fixing seat.

36. A parking system according to claim 35, wherein the second roller set is staggered to the first roller set by arranging the shaft thereof higher than that of the first roller set to form a wedge shape with the first roller set.

37. A parking system according to claim 21, wherein a pair of the first and second moving plates are driven by two power push rods respectively, each of which has one end fixed on the main body and the other end connected with the respective moving plate; while the other pair are driven by one power push rod, the two ends of which are connected with the two moving plates respectively.

38. A parking system according to claim 37, wherein each pair of the moving plates are provided with at least a sensor therebetween respectively for detecting the signals of opening-in-position of the support.

39. A parking system according to claim 37, wherein the main body and each moving plate

are provided with at least a sensor therebetween respectively for detecting the signals of closing-in-position of the support.

40. A parking system according to claim 37, wherein with respect to the pair of moving plates driven by two power push rods respectively, the two power push rods drive the moving plates in a substantive same driving force, and the pair of moving plates are ensured to open in-position no later than the other pair.

41. A parking system according to claim 21, wherein the loading table is provided with a pair of longitudinal guide tracks.

42. A parking system according to claim 41, wherein the differential table has an inverse convex shape, and is provided with a plurality of sets of sliding devices sliding along the longitudinal guide track of the loading table.

43. A parking system according to claim 42, wherein the sliding device on the differential table includes at least a horizontal wheel and a vertical wheel, matching with the longitudinal guide tracks on the loading table respectively.

44. A parking system according to claim 42, wherein the sliding device on the differential table is a wheel with a flange, matching with the longitudinal guide track on the loading table.

45. A parking system according to claim 42, wherein the sliding device on the differential table is a sliding block, matching with the longitudinal guide track on the loading table.

46. A parking system according to claim 21, wherein the driving device comprises two reducing motors, disposed on the end of the loading table with a first chain roller provided on the output shaft thereof;

two chain rollers, disposed on the differential table respectively; and

two sets of driving chains, crossing around the first chain roller and the chain roller disposed on the differential table respectively in such a manner that one end is fixed on the end of the trolley and the other end is fixed on the differential table.

47. A parking system according to claim 46, wherein the driving chain is fixed on the differential table by means of a bolt for adjusting the tightness of the driving chain.

48. A parking system according to claim 47, wherein the power tube line is attached to the driving chain through a connecting ring.

49. A parking system according to claim 48, wherein the driving chain is provided with a lower sliding block thereon for preventing a direct friction with the ground or other structures caused by the tube line attached on the chain.

50. A parking system according to claim 21, wherein the end of the loading table is provided with a buffer for providing damping and protection when the differential table reaches the limiting position.